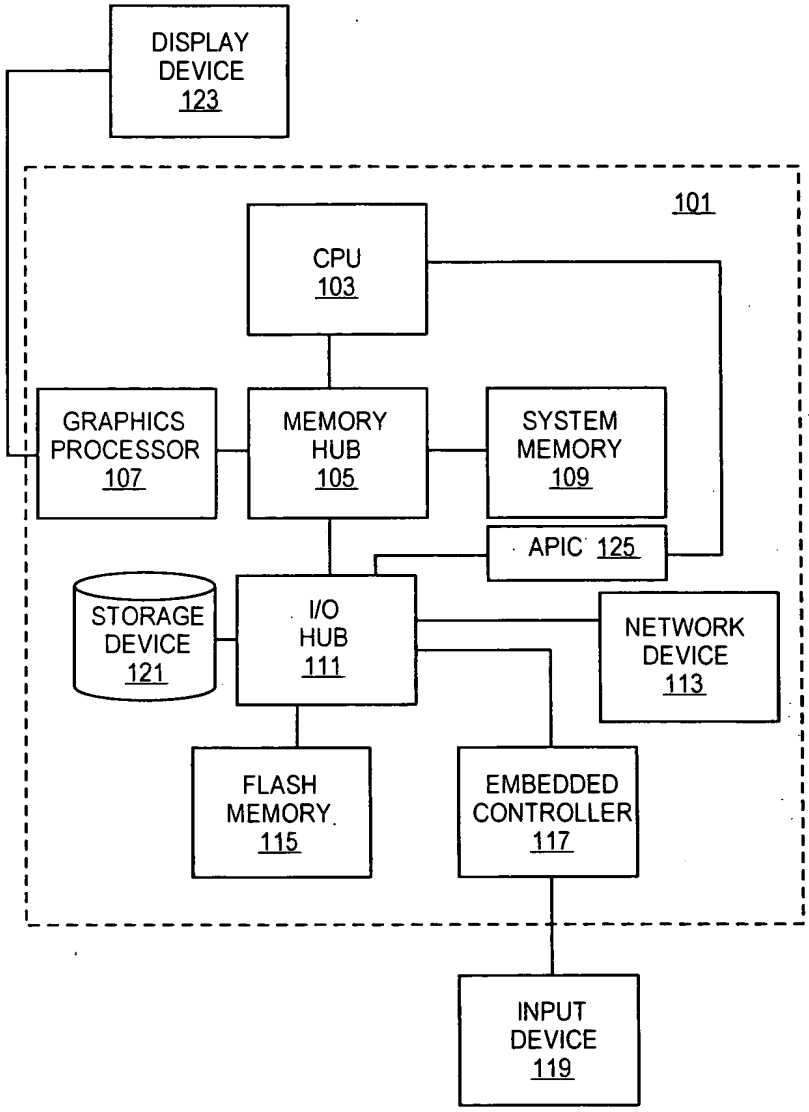
DISPLAY DEVICE 123
101
CPU 103
GRAPHICS PROCESSOR 107
MEMORY HUB 105
SYSTEM MEMORY 109
APIC 125
STORAGE DEVICE 121
I/O HUB 111
NETWORK DEVICE 113
FLASH MEMORY 115
EMBEDDED CONTROLLER 117
INPUT DEVICE 119

FIG. 1

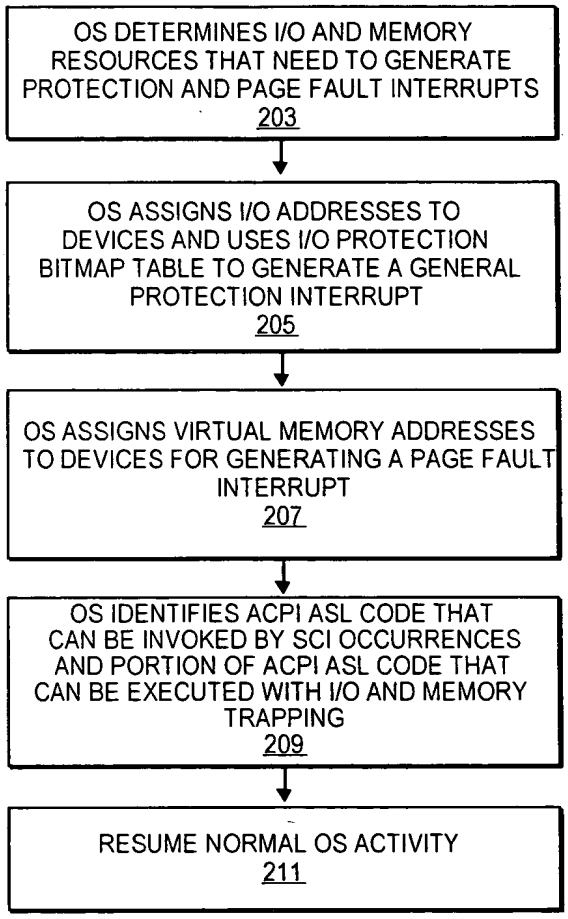
OS DETERMINES I/O AND MEMORY RESOURCES THAT NEED TO GENERATE PROTECTION AND PAGE FAULT INTERRUPTS
203
OS ASSIGNS I/O ADDRESSES TO DEVICES AND USES I/O PROTECTION BITMAP TABLE TO GENERATE A GENERAL PROTECTION INTERRUPT
205
OS ASSIGNS VIRTUAL MEMORY ADDRESSES TO DEVICES FOR GENERATING A PAGE FAULT INTERRUPT
207
OS IDENTIFIES ACPI ASL CODE THAT CAN BE INVOKED BY SCI OCCURRENCES AND PORTION OF ACPI ASL CODE THAT CAN BE EXECUTED WITH I/O AND MEMORY TRAPPING
209
RESUME NORMAL OS ACTIVITY
211

FIG. 2

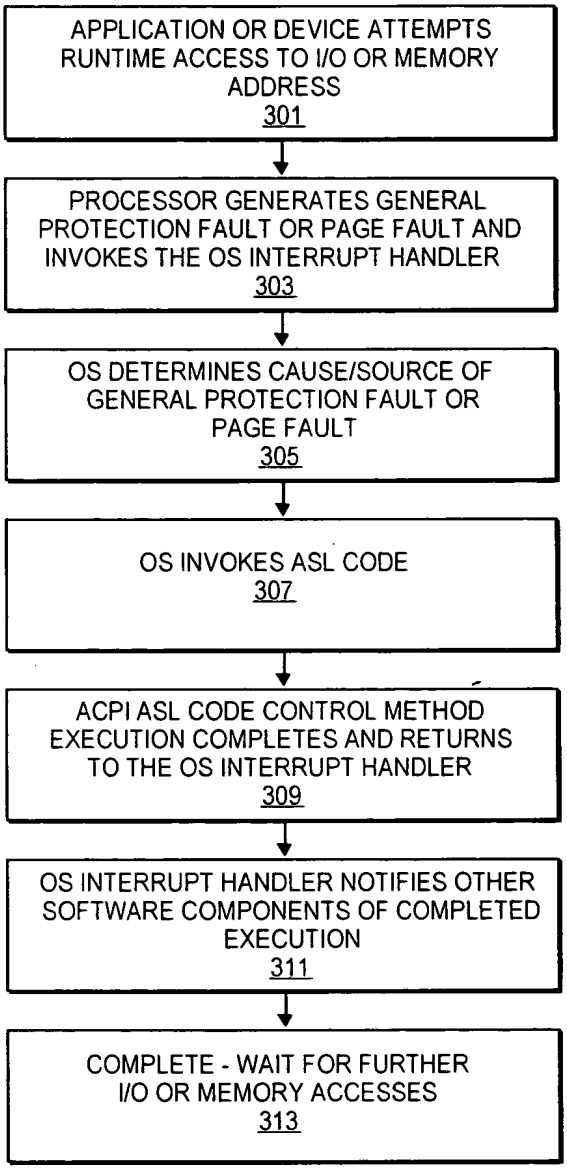
APPLICATION OR DEVICE ATTEMPTS RUNTIME ACCESS TO I/O OR MEMORY ADDRESS
301
PROCESSOR GENERATES GENERAL PROTECTION FAULT OR PAGE FAULT AND INVOKES THE OS INTERRUPT HANDLER
303
OS DETERMINES CAUSE/SOURCE OF GENERAL PROTECTION FAULT OR PAGE FAULT
305
OS INVOKES ASL CODE
307
ACPI ASL CODE CONTROL METHOD EXECUTION COMPLETES AND RETURNS TO THE OS INTERRUPT HANDLER
309
OS INTERRUPT HANDLER NOTIFIES OTHER SOFTWARE COMPONENTS OF COMPLETED EXECUTION
311
COMPLETE - WAIT FOR FURTHER I/O OR MEMORY ACCESSES
313

FIG. 3

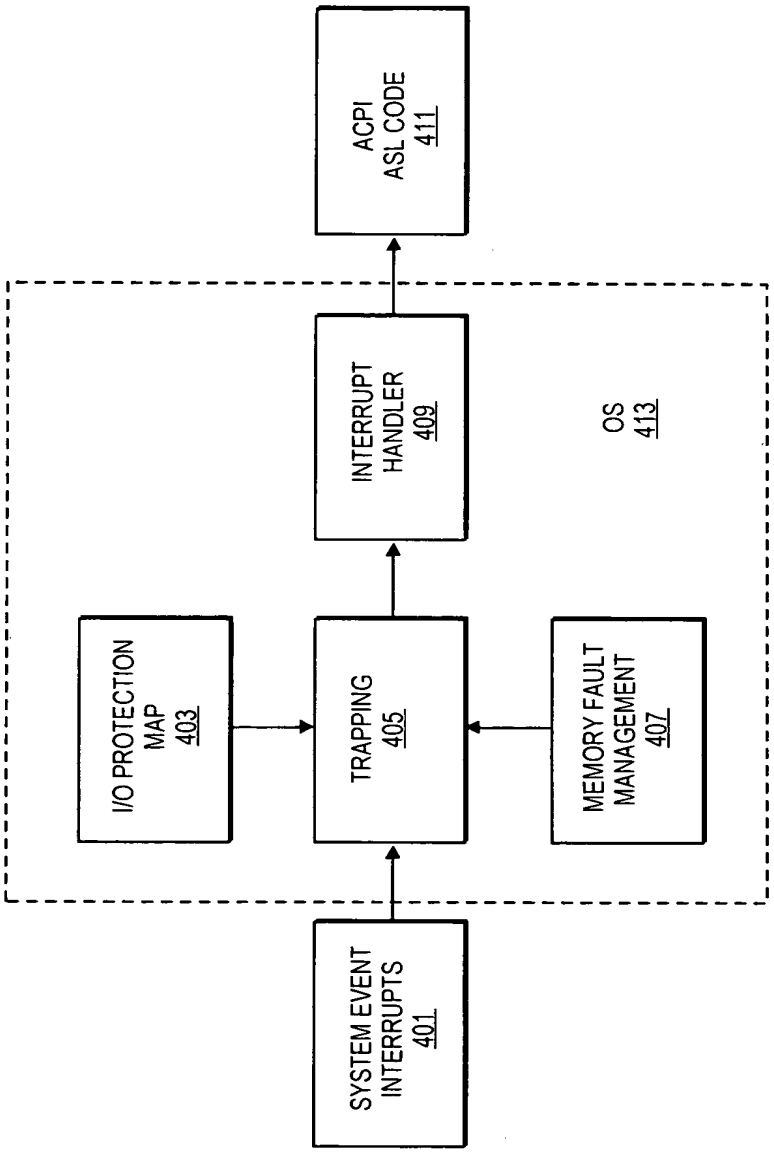
ACPI ASL CODE 411
INTERRUPT HANDLER 409
OS 413
I/O PROTECTION MAP 403
TRAPPING 405
MEMORY FAULT MANAGEMENT 407
SYSTEM EVENT INTERRUPTS 401

FIG. 4